

REMARKS

Applicants reply to the Office Action dated April 14, 2009, within the shortened three month statutory period for reply. Claims 1-2 were pending in the application and the Examiner rejects claims 1-2. Reconsideration of this application is respectfully requested.

The Examiner rejects claim 1 under 35 USC 102(b) as being anticipated by Yoshida et al., U.S. Publication No. 2005/0083814 A1 ("Yoshida"). Applicants respectfully traverse this rejection.

The claimed invention as set forth in Claim 1 is directed to a drive apparatus which defines a first data portion and a second data portion in the data to be recorded, and preferentially records the second data portion at the next writable address before recording the first data portion.

In particular, Claim 1 recites:

(1) "...defining data from a start location of the data stored in the memory circuit to a location corresponding to a next writable address as **a first data portion**;

defining data from the location corresponding to the next writable address to an end location of the data stored in the memory circuit as **a second data portion**; and"

(2) "controlling the recording/reproduction section to record the **second data portion** before recording **the first data portion**". (emphasis added)

Applicants assert that Claim 1 is directed to, for example, Embodiment 7 in the present application. Embodiment 7 is described in paragraphs [0791]-[0823] of the published application, with references to Figures 38-43. Two examples are illustrated therein.

Fig. 39 and Fig. 40 show one example of the claimed invention of Claim 1. In Fig. 39, F corresponds to the data stored in the memory circuit, al (or NWA7611A) corresponds to the next writable address, D2 corresponds to a **first data portion**, and E2 corresponds to a **second data portion**. Fig. 40 illustrates that after recording is performed, the **second data portion** E2 is before the **first data portion** D2 in the data structure.

Yoshida is directed to solving the problem of the spare area or the user data area sometimes becoming insufficient in a write-once optical disc. Yoshida is also directed to the problem of the defect management area sometimes becoming insufficient at the time of expanding the spare area (see paragraphs [0008] and [0009] of Yoshida).

The Examiner relies especially on paragraph [0080] of Yoshida for the disclosure of steps (1) and (2) of Claim 1. Specifically, paragraph [0080] discloses: "The spare area updating unit 209 records, in the spare area 110a and the like, the data recorded or to be recorded at the position at which the defect exists, when the defect exists on the optical disc 100. In addition, when the recording capacity of the spare area 110a becomes insufficient, for example, the spare area updating unit 209 expands the spare area 110 by disposing the spare area 110b at a new position by the above-mentioned method in response to a request command from the user or a host computer. Conversely, when the recording capacity of the user data area 102 becomes insufficient, the spare area updating unit 209 reduces the spare area 110 by allocating the spare area 110b to the user data area 102 by the above-mentioned method in response to the request command from the user or the host computer. It is noted that the spare area updating unit 209 executes the processes by an instruction from a CPU 213."

Applicants respectfully assert that no correspondence exists between Yoshida and the first and second data portion of Claim 1. Paragraph [0080] does not disclose defining a **first data portion and a second data portion** in the data stored in the memory circuit based on a location corresponding to a next writable address. Paragraph [0080] also does not disclose recording the **second data portion before the first data portion**. In fact, paragraph [0080] does not mention anything equivalent to a next writable address, or anything equivalent to defining data portions of the data stored in the memory circuit. Accordingly, Applicants assert that paragraph [0080] does not disclose or suggest the steps (1) and (2) of Claim 1.

The claimed invention achieves advantages that are not achieved by the invention of Yoshida. Without defining a **first data portion and a second data portion**, and **recording the second data portion before recording the first data portion** as recited in Claim 1, the entirety of the data to be recorded would be recorded through defect-management/pseudo-overwrite and replacement management information will be generated for the entirety of the data recorded. In

the claimed invention, a second data portion from the location corresponding to the next writable address is recorded first. Since the next writable address is the location which data can be recorded from, the recording of the second data portion does not generate replacement management information. (see paragraphs [0822] and [0823] of the published application). In other words, with reference to Fig. 40, in the claimed invention, replacement management information is not generated for the recording of the second data portion E2.

In contrast, Yoshida does not define a first data portion and a second data portion of the data stored in the memory circuit. Therefore, Yoshida can not avoid generation of replacement management information for a second data portion of the data stored in the memory circuit.

In conclusion, Claim 1 is novel and inventive over Yoshida for at least the above reasons. The anticipation rejection should be withdrawn and Claim 1 should be allowable.

The Examiner next rejects claim 2 under 35 USC 103(a) as being unpatentable over Yoshida in view of Hwang et al., U.S. Publication No. 2004/0218488 A1 ("Hwang"). Applicants respectfully traverse this rejection.

The claimed invention of Claim 2 is directed to a drive apparatus which performs pseudo-overwrite recording at a defective cluster, the defective cluster already having a corresponding replacement cluster. Specifically, the drive apparatus records the data to a location, that is close to the location of the replacement cluster for the defective cluster.

In particular, Claim 2 recites:

(1) "...when it is determined that the ECC cluster including the location specified by the recording instruction is replaced by a **replacement cluster** and"

(2) "the read-modify-write process is required,"

(3) "determining a specific location in the user data area which is close to the recording location of the **replacement cluster** as a recording location at which the data is to be recorded...". (emphasis added)

Applicants assert that Claim 2 is directed to, for example, Embodiment 9 in the description, as described in paragraphs [0857]-[0880] of the published application, with references to Figures 48-49. Fig. 49 shows an example of the claimed invention of Claim 2.

With respect to step (1), C1 corresponds to data specified by the recording instruction, 9301 corresponds to the ECC cluster including the location specified by the recording instruction, and 9302 corresponds to a **replacement cluster**. In Fig. 49A, it is determined that the ECC cluster 9301 is replaced by the **replacement cluster** 9302. A process for the determining step (1) is described in paragraphs [0359]-[0361] of the published application.

Regarding step (2), a process for the determining step (2) is described in paragraphs [0362]-[0364] of the published application. Specifically, paragraph [0362] of the published application discloses "[i]f the location and the size specified by the recording instruction do not match any boundary of the ECC clusters, then drive control section 311 determines that the RMW process is required". In Fig. 49B, it is determined that a read-modify-write process is required. Specifically, Fig. 49B illustrates data B1B2B3 is read from the replacement cluster 9301 and modified to data to be recorded C1B2B3, with data C1 as specified by the recording instruction.

The result of step (3) is represented in, for example, Fig. 49C, where ECC cluster 9303 corresponds to a recording location at which the data is to be recorded. It is shown that ECC cluster 9303 is close to the **replacement cluster** 9301.

The Examiner admits that Yoshida at least does not teach the steps (1), (2) and (3) from Claim 2. But the Examiner asserts that paragraph [0080] of Hwang discloses the above-mentioned steps (1), (2) and (3). The Examiner specifically refers to "if system controller 25 determines there is sufficient time to make a replacement" in paragraph [0050] for disclosing step (2). However, Applicants respectfully disagree. As explained above with reference to Fig. 49B, in step (2), the read-modify-write process is required "[i]f the location and the size specified by the recording instruction do not match any boundary of the ECC clusters" (see paragraph [0362] of P1). The condition that "there is sufficient time to make a replacement", is not the condition that the read-modify-write process is required in step (2).

It might have appeared that "an incomplete defect is detected" in paragraph [0050] of Hwang may correspond to step (1). However, Applicants assert that is not the case. "[A]n incomplete defect is a term defined by Hwang. It refers to a defective cluster without a replacement cluster (see paragraph [0040] of Hwang). In contrast, in step (1) it is determined that the ECC cluster is replaced by a **replacement cluster**. Therefore, Applicants assert the condition of "an incomplete defect is detected" is not the same as the condition of step (1).

Furthermore, Applicants assert that there is nothing in Hwang to disclose or suggest step (3). There is nothing in paragraph [0050] related to "determining a specific location as a recording location at which the data is to be recorded" as recited in Claim 2. In fact, paragraph [0058] of Hwang specifically discloses that "replacement clusters, which are substitutes for defective clusters, are written to a spare area. In general; replacements for defects are sequentially formed in the spare area, starting from a portion thereof with the smallest PSN. If necessary, replacements can be sequentially formed starting from a portion of the spare area with the largest PSN". Therefore, Hwang teaches away from, and cannot disclose or suggest, determining a specific location in the user data area.

Further, as shown above, the replacement of paragraph [0050] is done for "an incomplete defect", i.e. the defective cluster does not have a corresponding replacement cluster. Therefore, Hwang cannot disclose or suggest "determining a specific location which is close to the recording location of the replacement cluster", as recited in Claim 2. In view of above, Applicants assert that paragraph [0050] of Hwang also can not teach or suggest step (3).

The claimed invention achieves advantages that are not achieved by the invention of Hwang. The claimed invention determines, for example, "a specific location in the user data area which is close to the recording location of the replacement cluster as a recording location at which the data is to be recorded". Accordingly, it is possible to reduce access time required. Subsequently, it is possible to realize performing the replacement recording at higher speed (see paragraphs [0880] and [0881] of the published application).

In contrast, Hwang merely discloses determining locations for replacement recordings as sequential PSN in the spare area (see paragraph [0058] of Hwang). Nothing similar to the approach of Claim 2 is disclosed or suggested in Hwang. The invention of Hwang does not

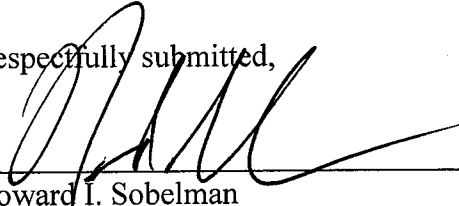
utilize the user data area for replacement clusters. When a defective cluster already has a replacement cluster, due to previous pseudo-overwriting or defect management, Hwang further does not reduce access time required to the new replacement cluster in the replacement recording.

In conclusion, Applicants assert that Hwang does not make up for the deficiencies of Yoshida. Therefore, Claim 2 is not obvious over Yoshida in view of Hwang, for at least the above reasons. The obviousness rejection should be withdrawn, and Claim 2 should be allowable.

In view of the above remarks, Applicants respectfully submit that all pending claims properly set forth that which Applicants regard as their invention and are allowable over the cited references. Accordingly, Applicants respectfully request allowance of the pending claims. The Examiner is invited to telephone the undersigned at the Examiner's convenience, if that would help further prosecution of the subject application. The Commissioner is authorized to charge any fees due to Deposit Account No. 19-2814.

Respectfully submitted,

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Howard I. Sobelman
Reg. No. 39,038

SNELL & WILMER L.L.P.
400 E. Van Buren
One Arizona Center
Phoenix, Arizona 85004
Phone: 602-382-6228
Fax: 602-382-6070
Email: hsobelman@swlaw.com